November 8, 2010

The Honorable Lisa P. Jackson
Administrator
United States Environmental Protection Agency
Ariel Rios Building - Mail Code: 1101 A, Room 3000
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Jennifer Sincock
U.S. Environmental Protection Agency
Region 3, Water Protection Division (3WP30)
1650 Arch Street
Philadelphia, PA 19103

Re: Docket ID No. EPA-R03-OW-2010-0736

Comments on Clean Water Act Section 303(d): Notice for the Public Review of the Draft Total Maximum Daily Load (TMDL) for the Chesapeake Bay

In 2008 the Pew Commission on Industrial Farm Animal Production released a report entitled "Putting Meat on the Table: Industrial Farm Animal Production in America." Among other things, the report concluded that a range of improvements to current animal waste management practices were needed to protect the health of those who live near and downstream from industrial farm animal production facilities. In the two years following the release of that report, the Pew Charitable Trusts has begun an effort to implement many of those recommendations.

United States government statistics indicate that about 500 million tons of animal manure are produced annually by confined animal feeding operations (CAFOs). While manure has long been used as fertilizer for crops and pasture, the increasing volume of manure and its concentration in certain geographic areas presents a major environmental challenge in the Chesapeake Bay region and elsewhere. Improper management of manure can present serious threats to water quality, contribute to declines in fish populations and other aquatic resources, lead to creation of dead zones and threaten the safety of drinking water for many Americans. The TMDL and state WIPs offer both the EPA and the states an excellent opportunity to begin to address these problems in the Chesapeake watershed.

Overview

The Pew Environment Group offers these comments on one specific aspect of the Chesapeake Bay TMDL—that dealing with the control of nutrients from animal agriculture. As such, these comments are not meant to offer a judgment on the overall adequacy of the draft TMDL or the individual state WIPs. They do, however, suggest policy options that we believe all the Bay

states as well as EPA should utilize to achieve the necessary reductions in release of key pollutants.

The purpose of the overall Chesapeake Bay TMDL and each state WIP is to lay out a specific strategy for achieving reductions in nitrogen, phosphorus and sediment sufficient to meet standards for the Bay and its tributaries. Though a number of commenters have argued otherwise, this "pollution diet," as the Agency is calling it, is flexible. Each state may achieve the necessary reductions in the manner it sees fit, curbing releases from the myriad of sources that range from municipal wastewater treatment plants and urban runoff to combined sewer overflows and agricultural sources. Under the authorities of the Clean Water Act and the mandate of the President's Executive Order on the Chesapeake Bay, EPA's duty is to determine whether these plans offer "reasonable assurances" that reduction goals will be met. Where such assurances are lacking, the Agency itself must step in, supplementing state regulation with appropriate and effective "backstops."

As all those involved in the decades-long effort to restore the Bay know, partial reductions from many of these sources have been achieved and further reductions from some sectors and in some jurisdictions will be increasingly difficult. The only path to Bay restoration is one in which each sector does all that is reasonably doable in terms of pollution reduction.

For that reason, we remind the Agency and the states that agriculture has long been and remains a major source of nutrients and sediment to the Bay.

Despite past and continuing efforts, including financial incentives, technical assistance, education and voluntary programs, there is much more that agriculture can do throughout the watershed to reduce its impact on the Bay. In particular, we believe that improved management of the huge volumes of manure generated by large-scale operations would result in significant and cost-effective pollution reductions from agricultural sources, and we urge the Agency and the states to place a renewed focus on the management of manure from concentrated animal feeding operations in the context of this TMDL.

We concur with those who stress the importance of maintaining agriculture and agricultural land in the Bay watershed region, but we also believe that releases from agriculture can be curbed dramatically without losing the farming that is an important economic sector and cultural element of the Bay region. In addition, we understand that many individual farmers have adopted important conservation practices over the years and we commend them for their stewardship initiative. Taken as a whole, however, the agricultural sector—like others in the Bay region—has yet to take all of the actions that will be necessary to restore the Bay and protect it for future generations.

In reviewing the draft WIPs, we are disappointed to find that the Bay states, for the most part, rely on a business-as-usual model for managing CAFO releases. In our view, they fall far short of what can and should be undertaken. EPA's proposal for regulatory "backstops" for CAFOs, which emphasizes releases from production areas rather than manured cropland, likewise falls short of what could be done to dramatically reduce pollutant releases associated with livestock agriculture.

The Case for Action

Over the past two decades, dozens of studies have laid out the case for reducing nutrient pollution to the Bay and made it clear that agriculture has been and remains a significant source of nitrogen, phosphorus and sediment entering the Bay. The following are among the most recent affirmations.

- In 2004, the Bay Program's Scientific & Technical Advisory Committee cautioned that, despite past programs, an estimated 41% of nutrients entering the Bay were associated with agriculture and that "additional major reductions" would be necessary. The scientific advisors noted that in-the-field results did not live up to predictions made by the Bay model and that the actual performance of best management practices was "widely considered to be the principle cause of the model's inability to reproduce observed conditions." Their recommendations included, among others, new efforts to verify results and an admonition that best management practices alone cannot address the "major nutrient imbalances" created by intensive animal production in the region.[1]

- In 2006, EPA's Inspector General, along with the Inspector General for USDA, cautioned that few of the recommended best management practices for agriculture were actually being implemented and that while less pollution was associated with agriculture than in previous years, the reductions to that point were not sufficient to meet water quality goals.[2]

- In 2008, the EPA Inspector General repeated those cautions and noted that the agricultural sector remained "the single largest contributor of the pollutants harming the Bay." That report noted that in 2007, the Bay jurisdictions were only 21 percent of the way toward meeting the water quality goals, a drop from 23 percent in 2006. Again, the IG pressed for efforts to address "limited implementation of agricultural conservation practices."[3]

- In 2009, yet another report, this one covering the national problem of nutrient pollution, offered similar conclusions on the need for action on agricultural and other non-point sources of pollution. According to the report prepared by the State-EPA Nutrient Innovations Task Group, ongoing programs, including collaborative efforts and financial incentives, would "fail…without a common framework of responsibility and accountability for all point and nonpoint sources." The Task Group bluntly stated that such a framework does not presently exist and offered specific recommendations for additional action, including action related to livestock operations and the use of manure to fertilize cropland. The report, entitled "Urgent Call to Action," held up the Bay and its large scale hypoxic zone as a "cautionary example," noting that past investments have achieved only about 27 percent of desired water quality standards.[4]

- The Interagency Working Group on Harmful Algal Blooms, Hypoxia, and Human Health reached a similar conclusion in 2010, calling for "a concerted and sustained effort to

address nonpoint sources of nutrients." That report noted that in large areas, such as the Chesapeake Bay watershed, intense management of point sources has not resulted in desired improvements, because control of nonpoint pollution lags.[5]

These reports, in and of themselves, offer clear backing for a strong TMDL and for aggressive state and federal action on agricultural pollution releases. We believe that a more recent report from the Department of Agriculture makes an even more compelling case for action.

We understand that EPA is familiar with all of these reports, but in light of the arguments that some commenters have made urging a slower pace in dealing with agricultural pollution and continued reliance on voluntary programs alone, we include these references and a perspective on this most recent report.

The CEAP Report

In late October, the USDA's Natural Resources Conservation Service (NRCS) released a draft report that underscores the difficulty of the restoration task and the magnitude of continuing releases from agriculture. The Conservation Effects Assessment Project's "Assessment of the Effects of Conservation Practices on Cultivated Cropland in the Chesapeake Bay Watershed" offers a stark and troubling picture of pollution control efforts to date. The report concludes that "cultivated cropland delivers a disproportionate amount of sediment and nutrients to rivers and streams and ultimately to the Bay."[6]

As with a similar, earlier report on conservation efforts in the Upper Mississippi River Basin,[7] this report, backed by an extensive, science-based investigation involving data collection, large-size farmer surveys and a field-scale model of agricultural practices effects, offers both good and bad news. The good news is that adoption of a suite of conservation practices that are generally well understood and can be readily implemented would achieve major reductions in the loads of nitrogen and phosphorus delivered to the Bay. The bad news is that despite nearly three decades of discussion about the importance of reducing nutrients to the Bay, this suite of practices has <u>not</u> been implemented across the cultivated cropland in the Bay watershed.

More specifically and strikingly, the report notes that nearly 81% or roughly 3.5 million acres of cropland in the Bay watershed need some level of additional nutrient control, and about half of cropped acres are "critically under-treated." According to the data collected by USDA directly from farmers, deficiencies are found in each of the four Bay sub-basins and on nearly all of the roughly 1.7 million acres of cropland that is treated with manure. Deficiencies involve inappropriate rates, timing, forms and methods of fertilizer and manure application.

These findings are even more troubling in light of the study's approach and limitations. USDA notes, for example, that the fundamental criteria used in the report to judge the adequacy of actual practices "do not necessarily represent the best possible or even the best practical set of nutrient management practices." The report's baseline practices, then, must be viewed as fundamental, rather than emerging or "next generation" practices such as precision farming and water control management, and it is deeply disturbing that USDA found that this essential suite of practices is not being widely implemented across the watershed. Even more disturbing, the

report notes that not all current nutrient management plans meet this basic level of water quality management.

In addition, USDA notes that the study did not evaluate the extent to which manure application meets criteria for a stricter phosphorus-based application. Although the report states that it is "common practice to use a nitrogen basis for manure application" and that such an approach "usually results in over-application of phosphorus," researchers did not evaluate this aspect of cropland management. Given the heavy concentration of livestock in certain areas within the region and the other report findings, it would appear likely that additional deficiencies with manure application exist.

Another troubling finding of the report involves the extent to which manure and fertilizer applications deliver nutrients to groundwater that, in turn, reaches the Bay. According to the report, "[t]he most critical conservation concern in the region is loss of nitrogen through subsurface loss pathways," and subsurface flows are the "dominant nitrogen loss pathway" for most cropped areas in the watershed. "[N]itrogen leaching losses," says the report, "are pervasive throughout most of the region." For phosphorus, the report concludes that the primary routes of release from cropland are through waterborne sediment and surface water runoff, as opposed to percolation. However, to the extent that nitrogen-based application practices lead to over-application of phosphorus, as discussed above, phosphorus surface discharge problems could worsen and groundwater release problems develop.

In our view, all of these reports and a larger body of scientific study of the Bay make a case for vigorous and innovative action to reduce agricultural related pollution—action we do not see in the current draft WIPs.

Improvements Needed

From our review of the individual state WIPs, we conclude that the state plans—even supplemented by EPA's backstop proposal—are not strong enough to achieve significant pollutant reductions from CAFOs and the manure generated by intensive livestock confinement in the region.

In discussing reductions from the agricultural sector, the state WIPs summarize existing programs and discuss the need for additional resources to assist farmers with preparation of nutrient management plans and share costs for manure storage facilities, stream fencing, cover crops, manure transport and other best management practices. Several assume significant increases in such practices to achieve large percentages in reductions, but for the most part do not identify specific new funding sources to assure that farmers will voluntarily adopt additional management measures. Virginia's WIP stresses nutrient trading but does not offer the needed detail on verification and accountability that such a program would require. Maryland's WIP notes that it is considering changes in the use of the phosphorus index but does not yet commit to that positive step. Delaware's WIP acknowledges the need to consider future growth of animal waste, but it presumes, we believe wrongly, that an expected decline in the number of farms negates any need to plan reductions around further increases in livestock numbers or in livestock concentration in areas with excess manure.

Overall, the WIPs and the backstops proposed by EPA build incrementally on existing programs, many of which are needed and worthwhile, but will not, of themselves, provide the level of pollutant reductions needed. The TMDL is necessary because decades of programs using traditional Clean Water Act approaches have not restored the Bay. By definition, then, the TMDL and the WIPs that lay out how it will be implemented must be ambitious and innovative. They should, of course, incorporate the best of the programs that the states and EPA have developed to date, but in order to be successful, they must go beyond those efforts.

When it comes to agriculture in general and CAFOs in particular, we recommend new priorities and approaches.

- **Set Priorities**
  As diversified, nutrient-balanced farming has declined in the Bay region and livestock operations have grown in scale and clustered geographically, the challenge of manure management has become more and more difficult. The Bay TMDL will not succeed if it does not recognize and address this challenge of excess manure, particularly in the hotspot areas in the Susquehanna watershed, the Shenandoah Valley and the Delmarva Peninsula. These regions should be treated as top priorities for regulatory efforts and for cost-share and assistance programs.

- **Issue More Individual Clean Water Act Permits**
  Clean Water Act permits are a reasonable means of clarifying expectations and obligations and maintaining accountability. Permit review and issuance provides an opportunity for thoughtful evaluation of the best options for protecting water quality, and permit record-keeping and reporting can set fair and objective measurements for judging performance. The TMDL should require individual permits for all large and most medium CAFOs generally and all but the smallest CAFOs in the Bay's hotspot areas. Permits should cover all livestock operations, without exclusions for dry manure handling.

- **Recognize that All CAFOs Discharge**
  The current EPA regulations adhere to the legal construct that some CAFOs are not required to hold Clean Water Act permits because they do not "propose to discharge," but this does not mean that such facilities do not adversely impact the Bay. In reality, all CAFOs discharge, either from the production and waste management areas or from associated cropland receiving CAFO-generated manure. A large body of scientific evidence underscores this point, and the impact on the Bay is the same whether pollutants are classified as "subject to permitting" or "agricultural stormwater." The Bay states derive their authorities to act not only from delegation under the Clean Water Act but also from various state laws and authorities, such as the Pennsylvania Clean Streams Law and Maryland's Water Quality Improvement Act. These authorities and the TMDL's mandate to address stormwater should be used to control all CAFO discharges, including those from manured cropland. Some states are currently using their authorities to require permits of CAFOs that do not specifically "propose to discharge." All states should do so.

- **Require Co-Permitting for Integrators**
  Many livestock farmers today operate under contract to corporations who own the animals and dictate critical management terms, including housing requirements and feeding regimes. They generally control the timing of animal deliveries and set dates for completing a growing cycle. These decisions have a substantial impact on the volume, nature and timing of manure generated. Contractors, then, should be treated as would any other entity exercising significant control of an operation governed by the Clean Water Act. They should be treated as responsible parties and co-permitees along with the growers who implement contract terms on a day-to-day basis. We believe that by clarifying the contracting companies' responsibilities for manure management, the states and EPA will better leverage the resources of these corporations on behalf of water quality management.

- **Address Accountability for Off-Site Manure Management**
  Many CAFOs generate excess manure, but Clean Water Act permits currently incorporate the terms of nutrient management plans only for the acreage under the control of the permittee. This approach imposes some minimal record-keeping requirements on the manure generator but generally removes the CAFO permittee from obligations to assure that the transferred manure is managed properly. Several of the Bay states have attempted to address this regulatory gap by requiring nutrient management plans for manure application on other farms, but we believe that the states and EPA should also amend their programs to assure that contractors remain accountable and assist with this effort. In those cases where integrators own the cropland or contract with crop growers to produce grain for their livestock operations, the benefits of co-permitting as noted above would also apply.

- **Improve Controls on Application of Manure to Cropland**
  Several states have worked to control releases associated with the use of manure as fertilizer, but those efforts have not been enough. Though nutrient management plans are required by a large segment of the agriculture community in Maryland, Delaware and elsewhere, and some states report high levels of compliance, releases are still unacceptably high overall. The nutrient management plans are a central linchpin for good environmental management, but USDA's own report on the Chesapeake Bay notes that some plans are inadequate on the fundamentals of timing, rate, form and method of fertilizer application, and USDA and others[8] have noted that some nutrient management plans in the region are still based on nitrogen and, therefore, sanctioning possible over-application of phosphorus. The Bay states, along with EPA and USDA, must commit to re-evaluating the currently acceptable methods of developing nutrient management plans and assure that deficient plans are corrected expeditiously. In addition, EPA's backstop measures for CAFOs should address manured cropland as well as CAFO production areas.

- **Restrict or Eliminate Manure Application in Phosphorus Saturated Soils**
  As noted above, technical experts have raised concerns that farmers may be applying manure in sensitive areas, either based solely and inappropriately on nitrogen management or based on phosphorus management protocols that fail to consider the

potential for non-erosion related releases of the pollutant. If this is the case in even a portion of the watershed, the soil "sink" of phosphorus that is being created will become a new long-term source of pollutant that will be exceedingly difficult to control. We believe that there is an urgent need to better understand and address the buildup of phosphorus in Bay watershed soils, and urge EPA, USDA and the states to convene an expert panel to assess the status of soils in the watershed, develop plans for tracking trends in soil saturation, and assure that appropriate steps are taken to restrict or eliminate manure application in saturated areas.

- **Consider Future Growth**
  Just as the states must plan for future residential and commercial growth in this TMDL, we believe they must consider the future growth of the animal population and its attendant manure generation. Consideration should be given to two areas of growth. First, future increases in animal numbers or animal density, and secondly, increasing soil saturation levels in certain areas. If national and regional trends continue, the number of individual farms may decline but animal numbers or animal density may still increase. The states should establish plans for managing such growth, with the possibility of prohibiting new or expanded large-scale operations in hotspot areas or making approval of new or expanded operations contingent on the adoption of a full suite of state-of-the-art best practices, such as precision farming. We believe that states must also plan for the contingency, which appears likely under current practices, that increases in soil phosphorus saturation will reach critical levels in certain areas and that additional areas will require P based nutrient management. If these conditions are reached, as they apparently have been in some areas, some farmers may not be able to apply manure to their crops, and excess manure may have to be transported even greater distances.

Conclusion

In closing, we again emphasize that we understand and appreciate that many individual farmers have undertaken conservation practices to mitigate the release of nutrients and sediment from their operations. Many of these valuable efforts have been supported, in part, with federal and state cost-share programs. We are hopeful that funding and technical assistance will be available in the future, particularly to assist small and limited-means farmers to undertake important conservation practices, including stream fencing, and we believe that the state WIPs should document plans for increasing these resources.

We also recognize that the Bay states have adopted a variety of programs, including important initiatives to require nutrient management plans from many agricultural producers, track manure shipments, support alternative uses of manure, address release of pollutants to groundwater and take special efforts to maintain high quality waters. These efforts have been important steps in Bay restoration, but more work remains. Unfortunately, the draft WIPs do not yet provide the specific plans for technical standards and technical assistance, financial incentives, regulatory programs and compliance and enforcement strategies that are needed for the next level of effort called for by the Bay Agreement and the TMDL.

From review of the large body of literature on agriculture and water quality, we conclude that farming and livestock operations can reduce their loadings to the Bay significantly and thereby

mitigate the need for Bay communities to undertake at least a portion of the most expensive alternatives. Farmers should not bear a disproportionate share of the Bay's "pollution diet," but should shoulder a fair share of the burden required to restore this national treasure. We are hopeful that the agricultural community, the Bay states and EPA will rise to the challenge with innovative and effective programs for controlling CAFO-related nutrient releases.

We appreciate the opportunity to share our perspective.

---

[1] Scientific & Technical Advisory Committee, Chesapeake Bay Program, *Innovation in Agricultural Conservation for the Chesapeake Bay: Evaluating Progress & Addressing Future Challenges* (US EPA, Chesapeake Bay Program, February 2004), http://www.chesapeakebay.net/content/publications/cbp_13325.pdf.

[2] US EPA Office of Inspector General and USDA Office of Inspector General, *Saving the Chesapeake Bay Watershed Requires Better Coordination of Environmental and Agricultural Resources*, Evaluation Report (US EPA, USDA, November 20, 2006), http://www.epa.gov/oig/reports/2007/20061120-2007-P-00004.pdf.

[3] US EPA Office of Inspector General, *EPA Needs to Better Report Chesapeake Bay Challenges: A Summary Report*, Evaluation Report (US EPA, Office of Inspector General, July 14, 2008), http://www.epa.gov/oig/reports/2008/20080714-08-P-0199_glance.pdf.

[4] State-EPA Nutrient Innovations Task Group, *An Urgent Call to Action: Report of the State-EPA Nutrient Innovations Task Group*, August 2009, http://www.epa.gov/waterscience/criteria/nutrient/nitgreport.pdf.

[5] Interagency Working Group on Harmful Algal Blooms, Hypoxia, and Human Health, *Scientific Assessment of Hypoxia in U.S. Coastal Waters* (Washington, DC: Joint Subcommittee on Ocean Science and Technology, Committee on Environment and Natural Resources, September 2010), http://www.whitehouse.gov/sites/default/files/microsites/ostp/hypoxia-report.pdf.

[6] Conservation Effects Assessment Project, *Assessment of the Effects of Conservation Practices on Cultivated Cropland in the Chesapeake Bay Region*, Draft (USDA, Natural Resources Conservation Service, October 2010), http://www.livablefutureblog.com/wp-content/uploads/2010/10/ceap_chesapeake_bay_report.pdf.

[7] Conservation Effects Assessment Project, *Assessment of the Effects of Conservation Practices on Cultivated Cropland in the Upper Mississippi River Basin*, Draft, (USDA, Natural Resources Conservation Service, June 2010), ftp://ftp-fc.sc.egov.usda.gov/NHQ/nri/ceap/UMRB_final_draft_061410.pdf.

[8] Caitlin Kovzelove, Tom Simpson, and Ron Korcak, "Quantification and Implications of Surplus Phosphorus and Manure in Major Animal Production Regions of Maryland, Pennsylvania, and Virginia" (Water Stewardship, Inc, February 2010), http://waterstewardshipinc.org/downloads/P_PAPER_FINAL_2-9-10.pdf.